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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/599,591

10/02/2006

Don W. Arnold

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EXAMINER

WONG, TINA MEI SENG

ART UNIT

PAPER NUMBER

2874

MAIL DATE

DELIVERY MODE

06/25/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/599,591	Applicant(s) ARNOLD ET AL.	
	Examiner TINA M. WONG	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-3 is/are allowed.
- 6) ☒ Claim(s) 15-18 is/are rejected.
- 7) ☒ Claim(s) 4-14 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 02 October 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>4/17/2008</u> . | 6) <input type="checkbox"/> Other: ____. |

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DETAILED ACTION

Priority

Receipt is acknowledged of papers submitted by the International Bureau under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

Claims 4-14 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim can not depend from another multiple dependant claim. See MPEP § 608.01(n). Accordingly, the claims 4-14 have not been further treated on the merits.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 15 is rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent 6,315,461 to Cairns.

In regards to claim 15, Cairns teaches a junction comprising an elongate component (78) which passes through the interface between two substrates (10 & 12), at least one of the substrates being a microfluidic substrate (fluid inside bladder 35 & 84), and the elongate component being surrounded, at the interface, by a gasket (Figure 5 & 6A).

Claims 15-18 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S.

Patent Application Publication 2004/0017981 to Jovanovich et al.

In regards to claim 15, Jovanovich et al teaches a junction comprising an elongate component (pins) which passes through the interface between two substrates (1081 & 1083), at least one of the substrates being a microfluidic substrate and the elongate component being surrounded, at the interface, by a gasket (1082). (Figure 33 & [0154])

In regards to claim 16, Jovanovich et al teaches a method of making a fluid-tight junction, which comprises providing two microfluidic substrates (1027 & 1025), each of which has a pair of alignment features (sides that touches the tray 1091 and pins 999) thereon, one of which has an elongate component extending from it (999) and the other of which has a conduit within it (must have bores where pins are inserted), placing the substrates on an alignment jig (1091) with the alignment features (side walls) in contact with the alignment jig and sliding one or both of the substrates along the alignment jig so that the elongate component enters the conduit. (Figure 25)

In regards to claim 17, Jovanovich et al teaches an assembly which comprises a microfluidic substrate (1091) and which has two parallel side faces each of which includes a groove (capillary tube sections 1001 entering the substrate), the grooves being separated from each other by a constant distance and preferably lying in the same plane. (Figure 29)

In regards to claim 18, Jovanovich et al further teaches (a) providing a microfabricated composite having a plurality of groove-forming conduits which are parallel to each other and which preferably lie in the same conduit plane. But Jovanovich et al fails to expressly teach (b) dividing the composite along a plurality of groove-forming planes which are parallel to each

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other and each of which (i) is at right angles to the conduit plane and (ii) passes through one of the conduits, thus producing a plurality of microfluidic chips, and a plurality of mating planes which are parallel to each other and each of which is at right angles to the conduit plane and to the groove-forming planes, thus producing a plurality of assemblies. However, it is well known in the art to form components multiple times on the same substrate and cutting along the grooves to form a plurality of the same component. Not only is this concept applied in Applicant's known art, this same well known concept is applied in other arts, such as liquid crystals and the semiconductor art. Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to have cut the substrate along the grooved planes in order to form the same component multiple times. This not only saves time and money during the manufacturing process, but also allows for an increase in production of the microfluidic substrate.

Allowable Subject Matter

Claims 1-3 are allowed. The prior art of record fails to disclose or reasonably suggest the detailed alignment features as configured in relation to the conduit axis, the alignment face and the substrate faces as claimed by Applicant in addition to the accompanying features of the independent claim.

Prior Art

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. None of the documents cited by the Examiner discloses or reasonably suggests the allowable subject matter discussed above.

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The documents submitted by applicant in the Information Disclosure Statement have been considered and made of record. Note attached copy of form PTO-1449. None of the references submitted by Applicant discloses or reasonably suggest the allowable subject matter discussed above.

Inventorship

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TINA M. WONG whose telephone number is (571)272-2352. The examiner can normally be reached on Monday-Friday 8:30-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Uyen-Chau Le can be reached on (571) 272-2397. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Tina M Wong/
Primary Examiner, Art Unit 2874